R E P O R T R E S U M E S

ED 015 264 VT 003 261

REGIONAL SEMINAR FOR STATE LEADERS IN VOCATIONAL EDUCATION ON IN-SERVICE EDUCATION. CENTER SEMINAR AND CONFERENCE REPORT, NUMBER 3.

BY- SCARBOROUGH, C. CAYCE
NORTH CAROLINA UNIV., RALEIGH, N.C. STATE UNIV.

REPORT NUMBER BR-5-1005-CR-3 PUB DATE 66
CONTRACT OEC-5-85-107
EDRS PRICE MF-$0.50 HC-$2.60 63P.

DESCRIPTORS- *INSERVICE TEACHER EDUCATION, SEMINARS, TEACHER ATTITUDES, *RESEARCH NEEDS, *VOCATIONAL EDUCATION, EDUCATIONAL PROBLEMS, PROGRAM IMPROVEMENT, *SOCIAL CHANGE, *EDUCATIONAL PHILOSOPHY,

THIRTY-FIVE STATE LEADERS FROM 10 STATES WITH RESPONSIBILITIES FOR INSERVICE EDUCATION OF TEACHERS AND LEADERS IN OCCUPATIONAL EDUCATION ATTENDED A SEMINAR WHICH EXAMINED TWO DIMENSIONS OF IN-SERVICE EDUCATION -- THE TEACHER AS A CHANGE AGENT IN THE ONGOING PROCESS OF SOCIAL CHANGE, AND THE TEACHER AS AN INTEGRATING AGENT IN TERMS OF VALUES AND PHILOSOPHICAL CONCEPTS. IN HIS PAPER ON "VOCATIONAL EDUCATION AND SOCIAL CHANGE," FRED BATES DISCUSSED VOCATIONAL EDUCATION AS ONE PART OF A PROCESS TRANSMITTING THE CULTURE OF THE SOCIETY, THEREBY CONTRIBUTING A PART OF THE CULTURAL BLUEPRINT OR "PROGRAM" FOR BEHAVIOR IN THAT SOCIETY. TO BE EFFECTIVE, THIS "PROGRAM" MUST FIT INTO THE LARGER PROCESS OF PROGRAMING GOING ON IN SOCIETY AND MUST FIT THE KINDS OF DATA OR STIMULI PEOPLE WILL ENCOUNTER IN THE WORLD OF WORK. "CHANGING BELIEFS AND PRACTICES OF TEACHERS," BOB BROWN, DISCUSSED THE GULF THAT SEPARATES THE THEORY AND PRACTICE OF TEACHING. TO SOLVE THE THEORY-PRACTICE DILEMMA, TEACHER-EDUCATORS MUST INQUIRE INTO (1) THEORIES THAT EXPLAIN WHY PEOPLE BEHAVE AS THEY DO, AND (2) THE STRUCTURE AND ORGANIZATION OF BELIEF SYSTEMS OR FRAMES OF MIND. PARTICIPANTS IDENTIFIED 20 RESEARCH AND DEVELOPMENT NEEDS AND 20 UNSOLVED PROBLEMS IN VOCATIONAL EDUCATION. A SUMMARY OF STATE REPORTS ON INSERVICE EDUCATION PRACTICES IS PRESENTED. THE APPENDIX CONTAINS THE SEMINAR PROGRAM, "PERSONAL BELIEFS INVENTORY," "TEACHER PRACTICES INVENTORY," A LIST OF 76 PROBLEMS OF INSERVICE EDUCATION, AND A LIST OF 17 INSERVICE PROGRAMS WHICH HAVE BEEN EFFECTIVE. (EM)

ED015264

AUG 2 8 1967

REGIONAL SEMINAR FOR STATE LEADERS IN VOCATIONAL EDUCATION ON IN-SERVICE EDUCATION

C. CAYCE SCARBOROUGH

SEMINAR CHAIRMAN

DEPARTMENT OF AGRICULTURAL EDUCATION

NORTH CAROLINA STATE UNIVERSITY AT RALEIGH

Center Seminar and Conference Report No. 3

CENTER FOR OCCUPATIONAL EDUCATION

NORTH CAROLINA STATE UNIVERSITY AT RALEIGH

1966

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

OFFICE OF EDUCATION—BUREAU OF RESEARCH

DIVISION OF ADULT AND VOCATIONAL RESEARCH

PROJECT NO. DAVR 5-1005, CONTRACT NO. OE 5-85-107

VT003261

CENTER FOR OCCUPATIONAL EDUCATION
RESEARCH-DEVELOPMENT-TRAINING

The Center for Research, Development, and Training in Occupational Education was approved and established as a Research and Development Center in 1965, under the provisions of Section 4(c) of the Vocational Education Act of 1963. The initial approval was for 20 months, ending 31 January, 1967. The proposal for the continuation of the Center for five years, beginning 1 February, 1967, has been approved and the continuation program is in operation. The total program, which has emphasized research in crucial problems in occupational education since its inception, has been divided into five complementary programs, including a research program, an evaluation program, a research development program, a research training program (in occupational education), and a services and conferences program. The Center is designed and organized to serve the nation, with special orientation to the southern states.

The Center is part of the program conducted under the auspices of the Educational Resources Development Branch, Division of Adult and Vocational Research, Bureau of Research, Office of Education, U. S. Department of Health, Education and Welfare. The Center is located at North Carolina State University at Raleigh, and has been established as an integral unit within the University. The program of the Center cuts across the Schools of Agriculture and Life Sciences, Education, Liberal Arts, and Physical Sciences and Applied Mathematics at North Carolina State University at Raleigh. Cooperating and participating Departments include the Department of Adult Education, Agricultural Education, Economics, Experimental Statistics, Industrial and Technical Education, Occupational Information and Guidance, Politics, Psychology, and Sociology and Anthropology.

THE CENTER SERVICES AND CONFERENCES PROGRAM

The Services and Conferences Program of the Center is established to facilitate the coordination of the program of the Center with other agencies and individuals interested in research, development and evaluation in occupational education; to arrange for consultation assistance with Center staff members for those who need and request it; and to disseminate the products of research and related activities of the Center. In addition, the Program has provided and will continue to provide assistance in planning and conducting conferences, workshops, seminars, and institutes which either are related to the research, development and training programs of the Center, or are related to the interests of other agencies which are relevant to the program of the Center. Reports of the proceedings of these conferences, workshops, seminars and institutes will be published in the CENTER SEMINAR AND CONFERENCE REPORT Series, under the auspices of the Services and Conferences Program. For additional information regarding the Services and Conferences Program, please write to:

Dr. Charles H. Rogers, Coordinator
Services and Conferences
Center for Occupational Education
P. O. Box 5082 (2100 Hillsborough Street)
North Carolina State University at Raleigh
Raleigh, North Carolina 27607

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

REGIONAL SEMINAR FOR STATE LEADERS IN VOCATIONAL EDUCATION ON IN-SERVICE EDUCATION

Project No. DAVR 5-1005
Contract No. OE-5-85-107

C. CAYCE SCARBOROUGH
Seminar Chairman

1966

****

The seminar reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

****

Center Seminar and Conference Report No. 3

CENTER FOR OCCUPATIONAL EDUCATION
North Carolina State University at Raleigh
Raleigh, North Carolina

PREFACE

In-service teacher education has been a vital aspect of administration, supervision, and teacher education in vocational and technical education from the initiation of programs of vocational education into the public schools during the first two decades of this century. With the elapse of a half century of experience in in-service teacher education, since the enactment of the Vocational Education Act of 1917, questions need to be raised regarding the nature, scope, and extent of in-service teacher education. The most crucial question, perhaps, is that of theoretical or rational bases which underlie in-service teacher education programs.

The Regional Seminar for State Leaders in Vocational Education on In-Service Education was directed toward the exploration of two dimensions of the bases underlying in-service education. One dimension examines in-service education in terms of social change--with attending emphasis on casting the teacher as a change agent in the ongoing process of social change. The second dimension examines in-service education in terms of values and philosophical concepts--with attending emphasis on casting the teacher as an integrating agent in reconciling educational theory and practice within a framework that is internally consistent. The logical extension of these two dimensions translates in-service teacher education more deeply as an object for philosophical inquiry and scientific investigation.

Appreciation is expressed to the consultants for the seminar--Fred Bates of the University of Georgia, Bob Burton Brown of the University of Florida, and Selz C. Mayo of North Carolina State University at Raleigh--in their perceptive contribution to the seminar. The leadership of Cayce Scarborough, seminar chairman, is acknowledged, and thanks are due to the members of the planning committee, including Naomi Albanese of the University of North Carolina at Greensboro, Rufus Beamer of Virginia Polytechnic Institute, C. Douglas Bryant of North Carolina State University at Raleigh, and Gerald B. James of Rockingham Community College. Appreciation also is expressed to Charles E. Lewis of North Carolina State University at Raleigh, who, together with Cayce Scarborough and Douglas Bryant, served as seminar coordinators.

John K. Coster, Director
Center for Occupational Education

TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
OBJECTIVES OF THE SEMINAR	3
PROGRAM PLANNING COMMITTEE	4
CONSULTANTS	4
PARTICIPANTS	5
VOCATIONAL EDUCATION AND SOCIAL CHANGE Address by Dr. Fred Bates	8
CHANGING BELIEFS AND PRACTICES OF TEACHERS Address by Dr. Bob Brown	16
RESEARCH AND DEVELOPMENT NEEDS OF IN-SERVICE EDUCATION	33
UNSOLVED PROBLEMS IN VOCATIONAL EDUCATION	35
SUMMARY OF STATE REPORTS	37
APPENDIX A. PROGRAM	43
APPENDIX B. PERSONAL BELIEF INVENTORY	45
APPENDIX C. TEACHER PRACTICE INVENTORY	47
APPENDIX D. PROBLEMS IN IN-SERVICE EDUCATION SUGGESTED BY PARTICIPANTS	49
APPENDIX E. IN-SERVICE PROGRAMS THAT HAVE BEEN EFFECTIVE	54

INTRODUCTION

As far as can be determined, this Seminar was a first in bringing together representatives of Vocational Education from State Departments of Education and Teacher Education programs in the states invited to consider the in-service education function in Vocational Education. By design, the Seminar program limited itself to two aspects vital to planning in-service education functions and programs anywhere. Only two formal presentations were made during the Seminar. One topic concerned "Change" as a human experience involving process. A leading sociologist developed group thoughts along these lines. The second topic concerned "Values and Philosophical Concepts" which operate in the in-service education environment. A leading educational researcher developed group thought on this theme.

Limiting the "content," as such, of the Seminar to only two areas, and making provisions for the consultants to remain throughout the Seminar, enabled the participants to explore in depth the concepts presented to the group. It was felt that this exchange between participants and consultants would do more to encourage in-service education changes back home. Thus, while a major concern of the Seminar did not deal precisely with "solving the in-service education problems back home," it may have given those present an orientation whereby educational experience could in practice be perceived as "change," "a process" involving "human values and philosophical meanings" for the learner.

Participants in the Seminar included state leaders with responsibilities for and interest in planning In-Service Education programs for the professional improvement of teachers and leaders in the broad area of Occupational Education.

It should be mentioned here that the people who assisted the Seminar Staff in the planning of the Seminar are due credit for holding to the idea of limited presentations and maximum consultant/participant interaction as a bases organizing the program. Too, credit is due the leaders of the Center for Occupational Education at North Carolina State University who consented to sponsor a Seminar of this type.

To the reader of this report, we hope that the messages of the consultants can have meaning for you in your role. Yet, we would be the first to admit that much of what really happened in this Seminar will not be found in the pages of this report; but, instead, in the behavior of those who attended.

C.C.S.

OBJECTIVES OF THE SEMINAR

1. To clarify the problems involved in planning and conducting effective In-Service Education programs of occupational education personnel.

2. To exchange ideas on in-service education, and identify problems needing research.

3. To develop further understanding and appreciation for the basic principles of change and the implications for in-service education programs.

4. To develop further understanding of values and philosophical concepts and their implications for in-service education programs.

5. To suggest possibilities for further cooperative regional efforts in in-service education, and the role, if any, for the Center for Occupational Education.

PROGRAM PLANNING COMMITTEE

Naomi Albanese, Dean, School of Home Economics, University of North Carolina, Greensboro, North Carolina.

Rufus Beamer, Head, Department of Vocational Education, Virginia Polytechnic Institute, Blacksburg, Virginia.

Douglas Bryant, Assistant Professor, School of Education, North Carolina State University at Raleigh, Raleigh, North Carolina.

Gerald B. James, President, Rockingham Community College, Wentworth, North Carolina (Formerly State Director of Vocational Education).

Cayce Scarborough, Professor, School of Education, North Carolina State University at Raleigh, Raleigh, North Carolina. (Chairman)

CONSULTANTS

Fred Bates, Head, Sociology and Anthropology, University of Georgia, Athens, Georgia.

Bob Burton Brown, Director, Teacher Competence Research Project, College of Education, University of Florida, Gainesville, Florida.

Selz C. Mayo, Head, Sociology and Rural Sociology, North Carolina State University at Raleigh, Raleigh, North Carolina and Acting Director, Center for Occupational Education.

PARTICIPANTS

Icesy H. Arnold, Itinerate Teacher Education, Department of Home Economics, Winthrop College, Rock Hill, South Carolina.

R. A. Baker, Assistant Professor, Department of Vocational, Technical, and Practical Arts Education, Auburn University, Auburn, Alabama.

C. D. Bates, State Supervisor, Division of Trade and Industrial Education, State Department of Public Instruction, Raleigh, North Carolina.

Harold R. Binkley, Chairman, Division of Vocational Education, College of Education, University of Kentucky, Lexington, Kentucky.

Fred E. Bishop, Assistant State Supervisor, Distributive Education, State Department of Public Instruction, Education Building, Raleigh, North Carolina.

James E. Bottoms, State Supervisor, Vocational Guidance, State Department of Education, State Office Building, Atlanta, Georgia.

William C. Boykin, Head, Agricultural Education Department, Alcorn A & M College, Lorman, Mississippi.

Thomas J. Brennan, Coordinator, Industrial Education, College of Human Resources and Education, West Virginia University, Morgantown, West Virginia.

Carolyn G. Brown, Assistant Supervisor, Occupational Home Economics, State Department of Education, Montgomery, Alabama.

Glenda Carr, Business Education, College of Education, 332 Norman Hall, University of Florida, Gainesville, Florida.

Lowery H. Davis, Department of Agricultural Education, Clemson University, Clemson, South Carolina.

J. Karl Doss, Head, Department of Trade and Industrial Education, University of Georgia, Badlwin Hall, Athens, Georgia.

T. L. Faulkner, State Supervisor, Vocational Agricultural Education, State Department of Education, Montgomery, Alabama.

Inez Frink, Chairman, Business Education, School of Business, Florida State University, Tallahassee, Florida.

W. E. Gore, Assistant Director, Vocational Education, Room 906, Rutledge State Office Building, Columbia, South Carolina.

Clyde W. Hall, Chairman, Division of Technical Sciences, Savannah State College, State College Branch, Savannah, Georgia.

Bruce Howell, Assistant Teacher Educator, Department of Agriculture and Extension Education, 186 Norman Hall, University of Florida, Gainesville, Florida.

Ed B. Hudgens, Coordinator, Program Services, Division of Vocational-Technical Education, 205 Cordell Hull Building, Nashville, Tennessee.

L. E. Kent, Assistant State Supervisor, Manpower Training Services, 523 East Main Street, Richmond, Virginia.

H. T. Lester, Division of Research, 123 Baldwin Hall, University of Georgia, Athens, Georgia.

J. H. Lowe, Assistant Supervisor, Industrial Education, Box 507, Abingdon, Virginia.

Louise Lowe, Associate Professor, School of Home Economics, University of North Carolina, Greensboro, North Carolina.

Nancy Matthews, Program Specialist, Home Economics Education, 3650 Piedmont Road, Huntington, West Virginia.

L. C. McDowell, Teacher Trainer, Industrial Education, College of Education, University of Kentucky, Lexington, Kentucky.

Vernon Musselman, Professor, Business Education Department, College of Education, Dickey Hall, University of Kentucky, Lexington, Kentucky.

G. W. Newbauer, Assistant Director, Program Services, Vocational, Technical and Adult Education, State Department of Education, Tallahassee, Florida.

Mary Ellen Pope, Teacher Educator, Department of Home Economics, Mississippi State College for Women, Post Office Box 282, Columbus, Mississippi.

James W. Selman, Assistant Professor, Department of Vocational, Technical, and Practical Arts Education, Auburn University, Auburn, Alabama.

O. L. Snowden, Professor & Head, Department of Agricultural Education, Post Office Box 1419, State College, Mississippi.

Ralph Tolbert, Chairman, Vocational Education, Department of Agricultural Education, University of Georgia, Athens, Georgia.

Macil Via, Supervisor, Division of Business Education, State Department of Public Instruction, Raleigh, North Carolina.

George A. Wagoner, Head, Business and Distributive Education, University of Tennessee, Knoxville, Tennessee.

George Weigers, Head, Department of Agricultural Education, 308 Morgan Hall, University of Tennessee, Knoxville, Tennessee.

Hazel Wilhoite, Assistant State Supervisor, Home Economics Education, State Department of Education, Richmond, Virginia.

Walter H. Wray, Assistant Professor, Industrial Arts and Vocational Education, Florida State University, Tallahassee, Florida.

VOCATIONAL EDUCATION AND SOCIAL CHANGE

Fred Bates, Head
Department of Sociology and Anthropology
University of Georgia
Athens, Georgia

In order to understand "the process of change" as it relates to vocational education it is necessary to identify two major tasks of education.

The first task is to adapt to the changing needs of society. Within vocational and technical education, the major problem is that of training or educating persons for occupational proficiency. Vocational educators have to develop programs to prepare persons for occupations in a constantly changing society.

The lapse of time between the point at which a curriculum is planned and the point at which an individual student enters an occupation illustrates two of the most significant variables or obstacles that need to be considered in planning educational programs. The two variables are time and space, and these two variables merit complete and full consideration by educational leaders in adapting educational programs to the needs of society.

Education must necessarily be for the future if it is to take into account the constant change occuring in society. Vocational education should aim to transmit the most technologically advanced occupational techniques to trainees. It should be experimental in the sense that it should be ahead of practice in the industry for which it is training people.

New work methods and new equipment and tools, even those not yet accepted in everyday practice should be tried out in a vocational education setting. If this kind of thing is not done, vocational training can only be for the past not for the future. The trainee will emerge from the school already obsolete.

To insure a forward looking curriculum in vocational fields, teachers and students should be encouraged to innovate and experiment. Research on how to improve work techniques in the vocational area should be encouraged and somehow webbed with the training process. Otherwise, the vocational educator and his student will always be reacting to changes long after they have occurred in industry and will be living in the past rather than looking to the future.

The spatial or geographic variable as it relates to vocational education is also important in adjusting to change. Typically, vocational training has had definite localistic or regional connotations. It is important to recognize several facts of social geography in planning and executing vocational education programs. First, all areas of the country do not change at the same rate. Some localities and regions lag behind others. If vocational training is carried on in an area of lag, one of its objectives should be to bring the area up to the level of vocational practice in the leading areas. In this sense, vocational education can act as an agent of change. Second, it should be recognized that people in our society are free to move about. Indeed the health of our economy demands a more or less free mobility of labor. Therefore vocational training should not train people only for occupa-

tions which are localistic. Instead it should present a broader opportunity for its students to participate in a national labor market and to be competitive in it. If only occupations found in the local environment are considered, then vocational education is limiting the opportunities of its students rather than opening up new opportunities for them. It is also true that it may be limiting the willingness of new industry to locate in the area.

When education becomes entirely localistic, and serves only the interests in its immediate environment, it inevitably becomes backward-looking rather than forward-looking in its orientation. Therefore, the time-space orientation used in education planning go hand in hand to create either a progressive or conservative curriculum.

The second major task of education is that of functioning as an agent of change in a growing and dynamic society. In a sense, all educational leaders are change agents. Either educational leaders are engaged in the process of manufacturing social change, or, if not manufacturing it, educational leaders are engaged in the processes of diffusing and spreading changes throughout the social system.

Training designed to preserve the status-quo is indoctrination rather than education and has no real place in a dynamic democratic society.

What we have said above amounts to saying that vocational educators should always attempt to be at the fore-front of social change and should consider their change agent role as dominant over other roles assigned to them. Instead of being followers attempting to keep up with changes

in "industrial practice" they should be ahead of industry promoting change, gaining acceptance of innovation, interpreting new techniques to the employer.

All of this implies a need not only to educate people for particular occupations, but to educate employers and managers to accept and utilize vocational innovations. This kind of role is most highly developed in agricultural education and perhaps could be spread to other areas. For example, should not training in automotive mechanics attempt not only to train "good mechanics" but also transmit to the employers of such specialists more advanced knowledge than they now have.

In discussing and considering social change, we must distinguish between what I call true change and false change. Social change is an alteration in the way in which human behavior is organized or structured. In order for social change to be effected, there must be a change in the way in which people relate to each other, or in the way in which they perform roles in society.

It is essential that a distinction be made between personal change and social change. Personal change is not synonomous with social change. Educational systems produce changes in the behavior of individuals through the experiences provided by the school. But these changes in behavior represent a change in the individual, and not a change in society or social change. In fact, society is geared to changing people rather than changing itself. Thus it is that society is geared to molding people to a structure, as it already exists. As a result bringing about personal change, often prevents social change. By putting a new person

in the position in a social system once occupied by another or by putting the same person in a new position, we sometimes are led to believe that we are engendering social change. Unless these new people actually change the structure of the system, no social change actually has occurred. Thus, personal change is one of the false changes in the social system which we frequently observe and falsely confuse with social change.

Another type of change which is often mistaken for social change is change in the environment in which the social structure is functioning. For example, radical changes may be brought about in the way of constructing buildings; contemporary city halls or school buildings may be erected, but the people in the positions may continue their work basically unchanged. The sheriff who is furnished a new uniform or provided a new automobile may perform his duties in the same manner as he did before acquiring the new mode of attire or the more modern, up-to-date vehicle. Studies of natural disasters reveal that frequently even major disruptions of social systems do not result in social change, and that once the people have recovered from the shock of such disaster, their former mode of behavior is restored. Again, therefore, environmental changes may be false changes in so far as the social order is concerned.

The real test of social change is whether social roles are being performed differently. New faces in old places do not necessarily bring about social change. Three key points are suggested as tests to apply to determine if social change has really transpired:

1. Social change transcends personal change. It is essential to distinguish between changes in actors and changes in the social system

in which the actors play roles.

2. Social change also transcends environmental change. It is essential that the person examining social change take into consideration the social relationships and the roles of people in the new surroundings, rather than focusing attention upon the surroundings themselves.

3. Social change involves an alteration of some kind in the system of social relationships. This alteration occurs in the way in which actors, through playing their roles, perform functions in society.

In understanding the process of social change and its impact upon the behavior of human beings involves in the societal process, it is essential that we realize that most of what we do is a product of learned behavior. Every society has certain patterns that are learned. Individuals vary within these patterns, but within the context of a general pattern. Variations or differences of behavior among actors are characterized as personality. Personality, therefore, is a term used to describe the total behavior of an individual within a pattern of behavior circumscribed by society. The pattern transmitted to the person by the society is called the culture of that society. Culture in other words is socially transmitted learned behavior.

Social interaction is another extremely important factor in human behavior. Much of what we do is a response to the behavior of others, guided and molded by our personalities and our cultures. Human behavior, and therefore changes in human behavior, is a result of the mutual influence of the three aforementioned factors--(1) culturally learned behavior patterns, (2) personality, and (3) social interaction. These factors, combined

in a social situation (a fourth factor), produce human action or behavior.

An analogy can be drawn between human behavior and the behavior of a computer. The personality and biological make up of the person can be compared to the structure and circuitry of the computer. Computers in other words have a certain built-in character which is comprised of its circuitry.

In order to behave and solve a problem, a computer has to be programmed. The program consists of a set of instructions which are fed into the computer to "teach it" how to solve a problem. The program amounts to telling the computer that if a certain thing happens, it is supposed to give a certain response. This is comparable to the culture of the individual. People are "taught" to respond to certain events in their environment in culturally prescribed ways. They are, in other words, given a cultural program for behaving.

After being programmed the computer is ready for action. It does not act, however, until data are fed into it. Let us suppose it has been programmed to do a simple correlation coefficient. It only performs this operation when it receives data on two variables that are fed into it in a certain way. Once it receives the data, it responds in terms of its program and does the work necessary to producing a correlation coefficient.

Once a human has been programmed by his culture to respond in certain ways, he is in much the same position as the computer. He only performs his patterned behavior when he receives the proper stimuli (data) from his environment. When he receives the right cues he

responds in terms of the cultural program.

We must not go too far with this analogy because people, unlike computers, learn during the process of "doing a problem," and thereby their program gets changed. Furthermore, the process of transmitting culture is much more subject to accident and mistake than that of programming a computer. After all we can clear the computer and start all over with our programming, but with a human, mistakes in programming cannot easily be corrected.

Now the point of this analogy is that in order to produce change in human behavior in a whole society we have to change the program for responding to data. This means we have to change the "cultural blueprint" for behavior. By so doing, we change the way in which all people who learn the culture respond to their environment rather than changing just one persons' responses.

Vocational education is one part of the process through which human beings are programmed to respond to their environment. Such education transmits a part of the culture of the society and thereby contributes part of the cultural blueprint or "program" for behavior in that society. If this part of the programming is to be effective it must (1) fit into the larger process of programming going on in the society, (2) fit the kinds of data or stimuli people will encounter in the world of work.

CHANGING BELIEFS AND PRACTICES OF TEACHERS

Bob Burton Brown, Director
Teacher Competence Research Project
College of Education
University of Florida, Gainesville

Nobody can plead, plug, or plump for change without taking a philosophic stand or making a subjective value judgment. When we advocate change--as almost everyone is doing in American education these days--we imply our dissatisfaction with some existing pattern of behavior. We have judged it to be "bad" or "wrong" or "inadequate" and are proposing changes we have judged will make it "good" or "right" or "adequate."

All behavior involves belief. Teachers, like everyone else, can behave only in terms of what seems to them to be so. Their classroom practices are related to their beliefs. If we want to change what teachers do in the classroom <u>voluntarily</u> and <u>willingly</u> (and therefore <u>well</u>), we have to change what they believe about (1) people, and why they behave as they do, (2) reality, or the world in which people live and (3) knowledge, its nature and relationship to what people do. Such beliefs are called a person's philosophic point of view or frame of mind. Within the traditions of our society different people deal with these basic philosophic questions in different ways and arrive at different answers.

One of the major difficulties in achieving sweeping educational change is bound up with the difficulty in changing basic philosophic

beliefs. Since people hold different and differing beliefs, any change must begin at a myriad of points and proceed in all directions at once. This makes wholesale changes in harmonious concert (the managers of change are characteristically committed to some grand plan for reaching nirvana) extremely difficult things to conduct in an open society.

Our national character has always been one of enormous differences within a framework of disharmonious union. In our better moments, we have not believed that people should be forced into common agreement. Instead, we have tolerated and encouraged many conflicting points of view. Under our open and democratic scheme, diversity and pluralism have flourished, providing a natural system of checks and b_ _nces among the various special interest groups. The conflicting viewpoints provided by such groups make for healthy controversy and debate of public issues. Freedom, experimentation, and creativity suffer whenever one group or one idea becomes so strong for so long that it crowds out all worthy opposition.

Present in the current clamor for educational change is a growing impatience with the old-fashioned virtues of decentralized diversity and pluralism. Faith in the many to participate in and assume responsibility for making independent decisions about educational policies and practices, among other things, has given way to the conclusion that the wisdom of a centralized elite is superior to that or disorganized backwoodsmen. Democracy has become obsolete--too slow and clumsy to meet the challenge of the urbanized space age and the threat of competing totalitarian systems. However, unless we become a totalitarian society

by default, our decision-making processes ought both to reflect and nourish the traditional variety in our national character, no matter how exasperating it may seem in our desire for something we call "efficiency" and "progress." In teaching, as in all other aspects of American life, we must constantly be on our guard against those who would have us swap decentralization, disharmony, and diversity in our beliefs and practices for some central, unified, monolithic structure which promises to relieve us of all our burdens and problems.

So long as we cling to our democratic traditions, teachers will continue to be confronted by incessant pressure from economic, ideological, political, and other power groups (including educators) to mold the curriculum and instruction of the school in the direction of their interests. Teaching practices viewed as right and good by some are viewed as wrong and bad by others. Teachers need to have an understanding of the values of such special interest groups as they bear on educational decisions. They need to become skillful in analyzing and criticizing the propositions put forward in debates between competing special interest groups. Operating within such a system, teachers cannot avoid making value-loaded judgments and decisions which stem from issues regarding fundamental ethical, moral, philosophic, and religious principles. Arguments about teaching practices are extensions of arguments about beliefs which for most people are accepted as unexamined premises or self-evident "truths." People disagree about the relative merits of various teaching practices because they hold conflicting beliefs about what is "right," "good," or "true."

Teachers are often overwhelmed by the variety and proliferation of practices available to them, and confused by the controversy about which of them they should choose and use. Intelligent evaluation and clarification of the vast jungle of teaching practices is possible only if the concealed cultural and philosophical roots of the competing interests in the controversy are raised to the level of consciousness and are opened for public inspection. This requires teachers to make a serious effort to identify the values they use as guiding principles in making judgments about teaching practices. Likewise, they should learn the value positions of the people who advocate or impose certain teaching practices. The controversy will not be resolved, nor the discussion ended, when underlying issues are properly examined and understood, but relative positions should be clarified sufficiently to permit teachers to devise and choose teaching practices with some personal sense of direction, organization, and confidence.

Let us now engage in a small inquiry to discover something of our own referents for good, right, and true. You have been given two inventories. Fill out the Personal Beliefs Inventory (See Appendix B) first and then the Teacher Practices Inventory (See Appendix C). Do this now, as quickly as possible. No one will know your score but you, so enjoy the luxury of unusual freedom for honesty.

Now, let me help you score the inventories and interpret the results. Some of you may have guessed the underlying dimension of the inventories. They tell us to what extent you agree or disagree with John Dewey's philosophy of experimentalism.

Scientific Attitude and Democracy

John Dewey, among others, made a long and concerted effort to wean people away from the prescientific or theological outlook. He tried to hitch the concept of democracy up to the scientific mode of thought. Dewey was concerned about the eclipse of faith in democracy, particularly just prior to World War II. At that time democracy was challenged by totalitarian dictators of the Facist or extreme right-wing variety on the grounds that human nature is such that people cannot be trusted as the source of authority in government, just as it was challenged by communist dictators on the left on economic grounds. He noted that comparatively few people were influenced by the attitude of science. Instead of forming their beliefs on the basis of factual evidence gained by intelligent inquiry, the great majority of persons seemingly form their beliefs by habit, accidents of circumstance, propaganda, personal and class bias. Dewey believed that the continued reliance on outmoded prescientific thought put the fate of democracy in danger, claiming that "The future of democracy is allied with the spread of the scientific attitude."[1]

Dewey saw the adoption of the scientific attitude as a democratic people's only protection against wholesale misleading propaganda, our own as well as that of the foreign enemy. It was his conviction that the extension of the use and influence of the scientific attitude as

---

[1]John Dewey, Freedom and Culture (New York: G. P. Putnam's Sons, 1939), p. 148.

the sole guarantee that there could ever be masses of free citizens who are intelligent enough to meet the challenge of the problems they must deal with in a democratic society. Of course, Dewey saw education as the chief means of spreading the scientific attitude, saying: "Until what shall be taught and how it shall be taught is settled on the basis of formation of the scientific attitude, the so-called educational work of the schools is a dangerously hit-or-miss affair as far as democracy is concerned."[2]

This close relationship which Dewey reasoned between science, democracy, and education is made clear throughout his philosophy of experimentalism.

Experimental and Nonexperimental Beliefs

It was Dewey's observation that modern science provides the intellectual tools which make possible the reshaping and re-creating of the world through purposeful social action. He advocated the application of the scientific method, which was developed in the process of man's learning to understand the natural environment, to human affairs. This is the method of inquiry and discovery. It learns from its successes and failures, and is thereby self-correcting. As new, more effective procedures and products are discovered, older, less desirable ones can be discarded. Thus, by the same sort of continuous inquiry and experimentation, what is truthful or good in human conduct can be determined.

---

[2] Ibid., p. 150.

Inherent in the experimental approach is an opposition to fixed, unchanging principles of reality, morality, and conduct. Likewise, experimentalism rejects a dualism between intellect and action. Instead, it stands for the utilization of unfettered intelligence, the development of working hypotheses, and deliberate introduction of change or reconstruction. Experimentalism is predicated on the belief that programs of action in social affairs should be regarded as theories to be supported or rejected, as they are in the natural sciences, by the consequences they bring about.

Dewey took a position with respect to what he thought was good or effective educational practices in classrooms and spent a long lifetime working out the logical relationships of his educational theory to basic philosophical theories about the nature of man, the nature of knowledge, the nature of valuing, and so forth. Dewey's theory (at the level of underlying philosophical beliefs) of the relation of knowledge and action may be viewed as equivalent to his theory (at the level of beliefs about educational practices) of the continuity or unity of subject matter and method.

At the level of basic philosophic beliefs, according to our analysis, the teacher whose beliefs are in agreement with Dewey's experimentalism will logically believe in the natural continuity of such things as mind and body, emotions and intellect, empirical knowing and rational knowing, objective knowing and subjective knowing, activity and passivity in knowing, theory and practice, ends and means, knowing and doing. On the other hand, the teacher whose fundamental philosophic beliefs are in

disagreement with Dewey's will logically believe that all the above-mentioned pairs of things are separated. For example, he may believe that mind is superior to matter, that practice is inferior to theory, that subjective knowing is much less valuable than objective or "pure" knowing, that certain ends may justify questionable means, and so forth. Dewey calls such beliefs dualisms. (See pp. 7-13 of Measurement of Experimentalism.)

The teacher whose beliefs about educational practices are in agreement with Dewey's will logically believe:

(1) in the unity of subject matter and method, and

(2) that the characteristics of the teacher's classroom practices should be identical, insofar as possible, with the essentials of reflective thinking.

In contrast, the teacher whose beliefs about educational practices are in disagreement with Dewey's will logically believe:

(1) that subject matter is something separated from method, that method is merely a means to the acquisition and possession of subject matter, and

(2) that the characteristics of the teacher's classroom practices need not be identical with the features of reflective thinking, and that the value of any given classroom practice lies not in the process but rather in the amount and kind of subject matter presented to and retained by the students.

Dewey suggested that belief in the dualism of subject matter vs. method resulted in the following "evils in education:" (a) neglect of

direct experience, (b) reliance upon extrinsic motivation, (c) making learning a direct and conscious end in itself, (d) following the prescribed steps of an established method, and (e) imposing a general method for all alike. (See pp. 14-23 of Measurement of Experimentalism.)

Now, let us return to the consideration of the problem of changing the beliefs and practices of teachers in connection with in-service educational programs. What good are such instruments for this purpose?

Well, what kind of changes do you wish teachers to make? Do you want them to move toward Dewey's experimentalism or away from it? Personally, I don't really care which direction teachers move with respect to agreement-disagreement with Dewey's experimentalism. My concern is with congruity of beliefs and behavior. Does the teacher do what he believes and believe what he does?

I think it is wrong (and that is a value judgment) for any group of planners of educational programs to try to change other people to any specific system of beliefs and values. Missionizers--people who take heathens from barbaric conditions in order to civilize them--are reprehensible scallywags with total insensitivity with respect to the rights and desirability of others to be different from themselves. We have a right to ask of others only that they be true to their own selves, or, in other words, that they be logically consistent in their own beliefs and practices. I'm talking about internal consistency, not external consistency. To have the beliefs and practices of all teachers consistent with each other would produce a monolithic dullness of catastrophic proportions.

According to my bias, the purpose of an in-service educational program should be to effect the remarriage of theory and practice--to bring them into a close and conscious everyday interrelationship. No one thing could do more to improve education than the bringing of theory and practice into an intelligently working relationship.

Every teaching practice is based on some theory, whether that theory is consciously recognized and explicitly stated or not. Teaching practice which is unconnected or unaware of its underlying theory is usually dull, routine, and stupid. It doesn't know what it is doing or why. It lacks specifiable direction, purpose, and reason. To be intelligent, or imaginative and exciting, practice must be deliberately related to theory. Failure to make this vital connection between theory and practice is a glaring weakness in American education.

Having culturally inherited some faulty theories, theory and practice have gotten separated, divorced, placed in opposition to each other in the minds of many of us. The traditional patterns of thought in our culture make theory remote from and oblivious to practice, and make practice ignorant of and hostile to theory. Both the theory and practice of teaching suffer because of this unnecessary and artificial separation.

In intellectual circles, the notion has long been held that theoretical knowledge is derived from a higher source and has a more spiritual worth than does practical activity. What is theoretical has been exalted as pure, of value in and of itself, quite apart from any reference to its possible practical use in applied art or science. What is practical has been depreciated as intellectually narrow, trivial,

mundane, clearly inferior to things of the mind.

On the other hand, among practical people it is not uncommon to find an earthy sort of reverse snobbery which looks down its nose at theory as a lot of fancy, abstract, egg-headed malarky. What works in practice, what proves to be useful in getting the necessary, obvious, dirty old everyday job done counts most. What is mere theory is discounted as so much far-fetched, high-flown nonsense which can be regarded only with doubt and suspicion.

How one looks at theory makes a difference. If we limit our picture of theory to include only an ideal or hypothetical set of facts, principles, or circumstances, we are likely to perpetuate <u>in our thinking</u> the separation of theory from practice. We restrict theory to an ideal realm of abstract knowledge and unprovable assumptions which can be connected to the real world of practical affairs by nothing more substantial than mystical moonbeams. With theory thus idealized, we assure ourselves of the failure in practice of what looked so promising in theory. On the other hand, if we can widen our thinking to permit theory to be seen as belief, policy, or proposed procedure to serve as a basis of action, we will be able to reunite theory and practice. Theory might then be seen as the intelligent explanation of practice, which permits theory to follow practice as well as lead it. Theory, in this broader view, is always developed in association with practice and serves as its frame of reference.

The Theory-Practice Dilemma

The establishment of the unnatural split between theory and practice has led to a discrepancy between what teachers say they know and believe in theory and how they teach, or fail to teach, in practice. We call this the theory-practice dilemma.

Even the most casual observer of the educational scene is familiar with evidence of this dilemma. Students are well aware that their teachers don't always practice what they preach. Teachers announce their good intentions to teach youngsters to think creatively, but test them almost exclusively for recall of specific facts. Parents notice that teachers' marking and reporting practices frequently bear little relationship to the statements of policy which appear on the cover of report cards. Fervently advertised theories of discipline to the contrary give no assurance that Sammy will not be rapped across the knuckles for violating his teacher's standards of conduct. Teachers in training are likely to discover a perplexing lack of agreement between the theory advocated by their professors of education and the practices demanded of them by the cooperating teachers selected by colleges of education to direct their student teaching experiences. In many textbooks on teaching methods, the discussion of theoretical issues and backgrounds in the beginning chapters is not related to the treatment of practical problems of teaching which follows in later chapters. And rarely do the professor's own teaching practices approach those he advocates to his students. It is difficult to find a teacher who does not pay lip service to the desirability of providing for individual differences among pupils.

Yet, it is far more difficult to find one who actually does anything about it in the classroom.

Even the best of teachers experience the theory-practice dilemma. They have trouble applying in practice what they know and believe in theory. A wise and effective teacher once remarked to me as we drove toward a state educational conference: "I don't know why I keep going to meetings to learn more about becoming a better teacher--I already know how to teach ten times better than I ever can." The problem of dealing with the theory-practice dilemma has stumped educational leaders for as long as anyone can remember. It is often shrugged off by muttering some old saw about the "best of intentions." Perhaps it can be explained more satisfactorily by questioning what we say we believe, and by inquiring more thoroughly into the nature of the relationship between theory and practice.

Perhaps the most noteworthy example of the discrepancy between theory and practice is the failure of American teachers to fully live up to their promise to challenge youngsters to think. Official statements of educational philosophy all across the nation avow that the most important task of teachers in a free society is to develop citizens who are committed to and skilled in the process of thinking--independently and reflectively. In a culture in which it is generally assumed that children should, above all, learn to make up their own minds and to think for themselves, it would seem reasonable to expect, as we observe teaching in classrooms the country over, to find students engaged in situations which call for reflective thinking. But we don't. Instead, we find students jumping through teachers' hoops like so many trained puppy

dogs, dutifully performing the required tricks as efficiently and as thoughtlessly as possible..

Reflective thinking is the method of solving problems by which science has progressed in its concept of nature. It is also the focal point of John Dewey's philosophy of experimentalism which is supposed to have thoroughly influenced what teachers in America believe and do about education. If this is so, why don't we find teachers providing students more thinking experience than we do? The obvious answer is that teachers have neither understood nor agreed with Dewey so well or so completely as is commonly supposed. While teachers may agree with Dewey about the importance of fostering in school good habits of thinking, they do not agree with Dewey that this is <u>all</u> the school can or should do for students.

Dewey equates an educative experience with a reflective experience; most teachers we have studied do not. Teachers do not seem to have recognized or accepted Dewey's belief that acquisition is always secondary and instrumental to inquiry. Instead, they have clung to the more conventional notion that reflective thinking, or experimental inquiry, is secondary and merely a means to the acquisition of a certain body of knowledge, skills, and attitudes which adults in the culture wish to preserve and pass on to their offspring. This insistence that students acquire a predetermined curriculum is why the florification of reflective thinking and inquiry has been little more than idle talk. In order to give children the freedom to think independently and reflectively, to engage in experimental inquiry, it would be necessary for us to run the risk that they might not end up in possession of the cultural heritage we

want so very much for them to have. Teachers, reflecting the mood of the culture, have generally avoided the risks and uncertainties of the experimental alternative and have been satisfied to play it safe, maintaining education as an essentially thought-immune "turkey stuffing" operation.

John Dewey observed that while "no one doubts, theoretically, the importance of fostering in school good habits of thinking....acknowledgment is not so great in practice as theory." His explanation of this state of affairs was that "There is not adequate theoretical recognition that all the school can do for pupils, so far as their minds are concerned...is to develop their ability to think."[3] He traced the source of the theory-practice dilemma back to the faulty theories of traditional philosophy and religion, which are dependent upon the presupposition of a split between a real physical world and an ideal mental world. What is more, he blamed all evils in education (and society) on the fundamental beliefs of such systems. Since most of us were born and brought up in a culture whose social, political, and religious institutions are rooted in traditional philosophies, it is little wonder, if Dewey's analysis is correct, that we bring beliefs with us into teaching which virtually guarantee that we will become hung up on the horns of the theory-practice dilemma.

---

[3]John Dewey, Democracy and Education, (New York: The Macmillan Company, 1916), p. 179.

Conflicts in Beliefs

All teachers possess beliefs which enter into or affect choices made in the performance of their teaching tasks. However, teacher beliefs operating in particular choice-making situations may not always be consciously recognized or associated with the practices chosen. Where this is so, we may expect inconsistency and conflict to creep into the method of classroom operation. In choices made on the basis of unconscious beliefs, irrelevant and unwarranted assumptions may be pulling practices in the opposite direction to which the teacher says he wants them to go, and, perhaps, honestly believes they are going.

For example, in investigating the relationship of teacher beliefs to classroom practices, we have discovered many teachers in just this sort of predicament. Most teachers we have studied think of themselves as democratic, flexible, open-minded, and experimental. Teachers' responses on the Teacher Practices Inventory indicate that the majority of them are in moderately high agreement with the educational practices advocated by John Dewey. However, when research teams observed the actual classroom practices of these same teachers, they found relatively few of them using such practices. This, of course, is further evidence of the theory-practice dilemma. Searching for some explanation, we attempted to measure the underlying philosophic beliefs of the teachers, using the Personal Beliefs Inventory. Most teachers were found to be in moderately low agreement with the fundamental philosophic theories in which the teacher practices advocated by Dewey are grounded. Although

they were inclined to agree with Dewey on beliefs about what teaching practices should be, they were inclined to disagree with him on general philosophic questions. The nonexperimental basic philosophic beliefs of teachers often contradicted their experimental educational beliefs. And when this contradiction occurred, the observed classroom practices of teachers tended to be pulled in the direction of the underlying philosophic beliefs. Basic philosophic beliefs seem to be powerful enough to overpower or cancel out conflicting or logically incongruent beliefs about teaching practice. This study offers at least a partial explanation of the theory-practice dilemma.

Our beliefs about fundamental philosophic questions lie beneath our beliefs about teaching practices, and are often disassociated with them. In order to understand, to evaluate, and to intelligently reconstruct conflicting theories and practices it is necessary that we first of all raise our basic philosophic beliefs to the level of critical self-consciousness. The beliefs we have acquired about the meaning of life, the nature and destiny of man, and the nature of the world in which we live are often buried deeply at the innermost center of our belief systems.

If we are to bridge the gulf that separates the theory and practice of teaching, we must inquire into (1) theories which help us understand why people behave as they do, and (2) the structure and organization of belief systems or frames of mind.

RESEARCH AND DEVELOPMENT NEEDS IN IN-SERVICE EDUCATION

One of the major objectives of the seminar was to identify some of the needs for research in the area of In-Service Education. Areas in which research needs were expressed by the participants are summarized below.

1. Developing new approaches to providing in-service education to vocational education personnel.

2. Providing more effective in-service education programs for non-degree instructors in trade preparatory classes in trades and industrial education, including general education.

3. Providing multi-service in-service education programs in vocational education.

4. Providing degree credit for vocational teachers who would like to study and work in modern industry and business.

5. Providing in-service programs for supervisors and administrators.

6. Providing in-service education to clerical staff members of vocational education departments.

7. Providing appropriate and ample time for in-service education.

8. Developing curriculum and teaching materials for in-service education programs.

9. Evaluating the effectiveness of in-service education programs.

10. Who should be responsible for preparing instructional materials in Vocational Education?

11. How can we get and give out realistic updated labor market information?

12. In some instances it becomes necessary to provide teacher preparation after the teacher has been employed.

13. In many instances related subjects such as science, mathematics, and drawing are taught by related-subject teachers with qualifications that differ from those required in certain occupations.

14. Some of the teacher training courses that are provided for trade and industrial education do not provide diversity appropriate to many occupational fields.

15. There is evidence that many vocational teachers are not experienced in the preparation of instructional materials.

16. Many vocationally trained people perform at levels of achievement which are two and sometimes three grade levels beneath the grade completed in school.

17. There is a need for providing more meaningful work experience in vocational teacher education programs.

18. Evaluation of vocational education programs.

19. Motivating the culturally deprived to avail themselves maximally to vocational training programs.

20. Providing job-oriented basic education for all students.

SOME UNSOLVED PROBLEMS IN VOCATIONAL EDUCATION

Participants were asked to list "Some Unsolved Problems" from their own situations in vocational programs in their home states. Some of these might have implications for research or other assistance from the Center. Those listed are as follows:

1. Development of a vocational mix (multi-service) program in vocational education. Example: agriculture-business-distributive; home economics-distributive-business; and agriculture-trades-business.

2. Selection, recruitment, and training of teachers.

3. Role of community college and vocational education.

4. Role of State Supervisors in new organization plan.

5. Recognition of Vocational Education by general instruction and visa-versa.

6. Grants and fellowship for vocational instructors for graduate study.

7. Problem of securing properly qualified and certificated vocational teachers for both teaching and administrative positions at the local and state levels.

8. Develop across-the-board interdisciplinary understandings in education to bring a sympathetic understanding between so-called academic educators and vocational educators.

9. Method of preparing instructional and ancillary service people to function across all vocational services or areas.

10. Who should be responsible for preparing instructional materials in Vocational Education?

11. How can we get and give out realistic updated labor market information?

12. In some instances it becomes necessary to provide teacher preparation after the teacher has been employed.

13. In many instances related subjects such as science, mathematics, and drawing are taught by related-subject teachers with qualifications that differ from those required in certain occupations.

14. Some of the teacher training courses that are provided for trade and industrial education do not provide diversity appropriate to many occupational fields.

15. There is evidence that many vocational teachers are not experienced in the preparation of instructional materials.

16. Many vocationally trained people perform at levels of achievement which are two and sometimes three grade levels beneath the grade completed in school.

17. There is a need for providing more meaningful work experience in vocational teacher education programs.

18. Evaluation of vocational education programs.

19. Motivating the culturally deprived to avail themselves maximally to vocational training programs.

20. Providing job-oriented basic education for all students.

SUMMARY OF STATE REPORTS

Participants from each state were requested to meet and discuss the in-service education programs and problems for vocational educators in their respective states. A selected number of the programs and problems are summarized below.

A. In-Service Education Programs Summary

1. Work-experience seminars for business education teachers have been held on an experimental basis. This seminar has a duration of six weeks during which time the teachers work full-time in some business. They meet in two hour sessions two evenings a week. The purpose of this program centered largely around helping the participants to up-date themselves as to procedures and equipment used in business today. (Florida)

2. Curriculum workshops which were experimentally designed for teachers in particular occupational areas to do planning with outside consultant help. (Florida)

3. A project was conducted to develop and adapt instruments for use in determining the home-making skills needed in gainful occupations in that area. This effort is expected to shed light on the special areas of instruction needed in training people in these occupations. (Florida)

4. A statewide committee has been formed to determine needed research in in-service education for business teachers. Representatives from higher education, State Department of Education groups, and business are on the committee. (Florida)

5. Twenty-one different Occupational Competencies Examinations were developed to assist in verifying the scope of a person's work experience in the occupations. Teachers who have a wide range of experience in an occupation are able to get 30 semester hours credit upon successful completions of these examinations. (Florida)

6. A Materials Center to prepare instructional units for use by teachers was established. A common format will be used in developing the units, which will make cross-service use of many units possible. Plans are to develop aids to use in teaching the units. (Kentucky)

7. A Demonstration Center was established for preparing 12 twelveth grade students of vocational agriculture for "entry" in agriculturally related job opportunities in sales and service and supply businesses. (Kentucky)

8. An eight weeks Research Institute was conducted for teachers, supervisors and teacher educators in each vocational education area. Nine semester hours of credit was allowed for those desiring credit. (Kentucky)

9. Training programs or workshops were organized for agricultural occupations and home occupations instructors. (Kentucky)

10. A policy has been established whereby teachers will participate in ten days of training prior to school opening each year. (Tennessee)

11. Follow-up programs have been implemented for beginning teachers in all Vocational Education areas. (Tennessee)

12. Area Training Centers have been established for all Vocational Education Services and the assignment of teacher educators to providing in-service training in the Centers. (Tennessee)

13. Training programs have been planned where the State Department, Teacher Educators and representatives from industry join forces in planning educational experiences for teachers entering new occupational training areas. (Georgia)

14. A Teacher Specialist's Six Year Certificate has been developed for Vocational Teachers. (Georgia)

15. A grant of $150,000.00 has been approved under Title IVc to train 20 selected vocational education administrators. The two year in-service education program will consist of interdisciplinary instruction during the first year with follow-up the second year. Participants are required to meet in class two days each month during the first academic year and three weeks during the summer. (Georgia)

16. In-service training in workshop fashion is offered for one week during the Annual Teachers' Conferences. (Virginia)*

B. In-Service Education Problems Summary

1. A concept which seemed universal to the group was the role state departments of education played in the in-service education of vocational personnel. It appears safe to say that in the South it is the

---

*States were encouraged to meet and discuss their in-service education activities and problems at home. Further, they are encouraged to submit the results of their meetings provided they felt it would make a contribution to the conference. Thus, no real pressure was brought to bear on each state to submit a report. However, some states did submit a report which their seminar directors felt might be of interest to the reader. States are listed behind their activity of interest to enable them to pursue the topic with someone in the state.

State Departments of Education, and more specifically the State Boards of Education, who most influence both the quality and scope of in-service education for vocational personnel. Teacher Education programs seemed almost without exception to be at the mercy of supervision in this regard. It seemed to be the concensus of the group that teacher education's role in the total in-service education picture needs to be strengthened.

2. There has been very little done in providing across the board vocational education in-service education offerings in the states represented at this conference. It was generally agreed that ways must be found to encourage a vocational education, or perhaps an occupational education in-service education-mix, in the future.

3. There appeared to be differences of opinion as to what an in-service education program should include. County coordinators of vocational education, supervisors and teacher educators tended to speak different languages on this topic. The suggestion was advanced by one state that a study is needed to determine the perceptions of vocational educators on what constitutes an adequate program of in-service education.

4. The idea was advanced that a major effort is needed to inform leaders in the colleges and universities of the in-service education needs and opportunities in vocational education. It was generally believed that passage of the 1963 Vocational Education Act should strengthen our position along these lines provided lines of communication can be opened on this topic.

5. The general opinion was expressed that there was a lack of policy which clearly makes a case for increased participation in in-service

education in the future. It was suggested that educational systems must find ways to build in institutional expectations for in-service education participation. All too often it is seen as an individual responsibility. This attitude needs modification in the future.

6. It was suggested that greater professional involvement was needed in establishing certification policies in the states. In most states a Division within State Departments had assumed this responsibility, and all too often teacher educators were not involved in the process.

7. There is a trend in some states to shape teacher certification policy which will require credit courses and/or college or university study. Shaping this policy requires State Board action and as a result of this action, teacher educators are hard-pressed to provide the courses necessary for meeting the requirements.

APPENDIXES

APPENDIX A.

PROGRAM

Wednesday, May 18, 1966

Arrive Hilton Inn

3:00-10:00 P.M. Register for Seminar and Rooms.

8:00 P.M. Meeting of Consultants, Coordinators, and Panel Members — Cherokee Room

Thursday Morning, May 19, 1966

8:30 FIRST GENERAL SESSION — Cherokee Room
Cayce Scarborough, Presiding
Introductions
Announcements
Why this Seminar on this topic?

9:00 Introduction of Speaker
Dr. Selz C. Mayo

Address, "The Process of Change"
Dr. Fred Bates, Head, Sociology and Anthropology,
University of Georgia, Athens, Georgia

10:00 Coffee Break

10:30 Discussion of the address by Dr. Bates
a. Clarification of major ideas presented
b. Implications for in-service education

12:30 Lunch

Thursday Afternoon, May 19, 1966

2:00 SECOND GENERAL SESSION — Cherokee Room
Douglas Bryant, Presiding
Introduction of Speaker
Cayce Scarborough

Address, "Changing Beliefs and Behavior of Teachers"
Dr. Bob Burton Brown, Director
Teacher Competence Research Project,
University of Florida, Gainesville, Florida

3:00 Coffee Break

3:30 Discussion of the address by Dr. Brown
a. Clarification of major ideas presented
b. Implications for in-service education

4:30 Plans for Meeting by States

5:00 Adjourn

Night Meeting by states

Friday Morning, May 20, 1966

8:30 THIRD GENERAL SESSION — Cherokee Room
Louise Lowe, Presiding

Panel of Participants
"What changes do we at the state level need to make in our roles as leaders of in-service education programs if we are to incorporate the basic principles of change process and value concepts as proposed by Dr. Bates and Dr. Brown"?

Harold Binkley, Kentucky
Inez Frink, Florida
W. E. Gore, South Carolina
J. H. Lowe, Virginia
Selz Mayo, Moderator

9:30 Reaction and Summary Statements by Dr. Bates and Dr. Brown

10:00 Coffee Break

10:30 FINAL GENERAL SESSION — Cherokee Room
Karl Doss, Presiding

10:45 Reports from States
Include the following:

a. New approaches to in-service education that look promising

b. Some unsolved problems

c. Some research needs

Alabama
Florida
Georgia
Kentucky
Mississippi
North Carolina
South Carolina
Tennessee
Virginia
West Virginia

12:30 Adjourn

APPENDIX B

PERSONAL BELIEFS INVENTORY

Form B

This is a study of what people believe about a number of basic philosophical questions. The best answer to each statement below is your personal belief. Many different and opposing points of view are presented here. You will find yourself believing some of the statements, not believing some, and uncertain about others. Whether you believe or do not believe any statement, you can be sure that many people feel the same as you do.

Mark each statement in the left margin by writing 1, 2, 3, or 4, 5, 6 depending on how you feel in each case.

1. I agree very much
2. I agree on the whole
3. I agree a little
4. I disagree a little
5. I disagree on the whole
6. I disagree very much

_____1. There is no spiritual realm which lies beyond man's experience in the natural world.

_____2. A statement of fact may be <u>both</u> true <u>and</u> untrue depending on the standpoints and conditions of the observations.

_____3. The mind possesses faculties for remembering, imagining, reasoning, willing, and so forth which are developed by exercise and discipline.

_____4. What something may be when totally independent of any observer or frame of reference is a scientifically meaningless question.

_____5. The use of the scientific method can be extended to solve the problems of men in the area of values and moral judgment.

_____6. The senses and muscles are merely external inlets and outlets of the mind.

_____7. Reaching a condition in which there were no more problems would be the ideal life.

_____8. Man's destiny is determined by circumstances of nature which are beyond his control.

_____9. Knowledge is the result of theoretical insight on the part of scholars.

Mark each statement in the left margin by writing 1, 2, 3, or 4, 5, 6 depending on how you feel in each case.

1. I agree very much
2. I agree on the whole
3. I agree a little
4. I disagree a little
5. I disagree on the whole
6. I disagree very much

_____10. In the absence of a moral code supported by absolute authority, bodily appetite and passion overpower intelligence.

_____11. Man's choices are good only if they prove successful in helping him live with some degree of security and equilibrium in the world of nature.

_____12. Knowledge is artificial and ineffective in the degree in which it is merely presented as truth to be acquired and possessed for its own sake.

_____13. The nature of a thing is determined by what it does, or can be used for; it is what is becomes with intelligent use.

_____14. Man is capable of managing his own destiny in an understandable and predictable natural world.

_____15. The ends and laws which should regulate human conduct have been determined by the superior intelligence of an ultimate Being.

_____16. There can be no final, absolute ends to which all men aspire.

_____17. Knowledge is the sum total of what is known , as that is handed down by books and learned men.

_____18. What is morally right and wrong ought to be decided on warranted evidence--the findings of empirical science.

_____19. "Mind" is purely intellectual and cognitive; bodily activity is an irrelevant and intruding physical factor.

_____20. Man gains knowledge by having things impressed upon his mind.

APPENDIX C

TEACHER PRACTICES INVENTORY

Form B

This is a study of what people believe is good teaching. Each statement below describes teacher practice--something a teacher might do in a classroom. Many different and opposing kinds of teacher practices are presented here. As you read these statements, you will find yourself agreeing with some, disagreeing with some, and uncertain about others. The best answer to each statement is your personal belief or opinion.

Mark each statement in the left margin by writing 1, 2, 3, or 4, 5, 6 depending on how you feel in each case.

1. I agree very much
2. I agree on the whole
3. I agree a little
4. I disagree a little
5. I disagree on the whole
6. I disagree very much

_____1. Gives students a free rein in devising and inventing proposals for what might be done to clear up trouble-some situations.

_____2. Makes students emphatically aware that they are here to study and learn.

_____3. Limits physical activities to the gym or the playground.

_____4. Faithfully follows a planned schedule in order to get in the number of minutes each week allotted to each subject in the curriculum.

_____5. Frequently asks students to choose among several alternatives.

_____6. Urges students to put everyday things to uses which have not occurred to others.

_____7. Allows students to move freely about the room while engaged in purposeful activity.

_____8. Gives students a number of starting places and a number of different ways of getting at what is to be done.

_____9. Insists that students face up to the realities of unpleasant predicaments and plights they get themselves into.

_____10. Quickly tells students whether their answers are "right" or "wrong."

Mark each statement in the left margin by writing 1, 2, 3, or 4, 5, 6 depending on how you feel in each case.

1. I agree very much
2. I agree on the whole
3. I agree a little
4. I disagree a little
5. I disagree on the whole
6. I disagree very much

_____11. Shows students the most economical and efficient way to get a job done and expects them to do it pretty much that way.

_____12. Provides approximately the same materials for each student in the class.

_____13. Encourages students to venture into "deep water," to tackle problems that appear to be "over their heads."

_____14. Sticks to questions which can be answered by looking in the textbook or other references readily available in the school.

_____15. Tells students where to start and what to do to accomplish the task at hand.

_____16. Accepts material in the approved textbook as a reliable measure for the appropriateness of information brought in by students from other sources.

_____17. Organizes learning around questions posed by the teacher or the textbook.

_____18. Engages students in dramatizations, music, art, and other creative activities.

_____19. Encourages students to put their suggestions to a test with such remarks as "You'll never know unless you try it."

_____20. Makes "doing something" with a thing, rather than the <u>thing</u> itself, the center of students' attention.

APPENDIX D

PROBLEMS IN IN-SERVICE EDUCATION SUGGESTED BY PARTICIPANTS

1. Kinds of workshops, short courses, etc., best suited for upgrading classroom instruction. (We find many teachers do not know how to select equipment, plan layout and flow of work, use or instruct in the use of new equipment.)

2. Types of graduate programs fitted specifically to the needs of special vocational teachers--office occupations, etc.

3. Ways of providing work experience for in-service teachers other than uncoordinated summer work.

4. What role should school districts, teacher education departments, and supervisory staffs play respectively in a program of in-service education?

5. If in-service education is to be a role of teacher education departments, what are some activities that will help teachers in the field see the role that the teacher education department could assume?

6. Securing well trained personnel to help teachers with problems.

7. Inspiring teachers to want help.

8. Deciding on best methods for conducting an in-service program.

9. Determining type of assistance to give teachers in developing the occupational training and special needs programs.

10. Ways to help vocational teachers in different areas to develop a total vocational program in a community.

11. Encouraging teachers to keep themselves up-to-date professionally.

12. Role and scope of itinerant work in in-service teacher education.

13. Inducing older teachers to accept newer concepts in theory and practice.

14. Getting teachers to agree on the type of in-service courses or workshops needed.

15. Getting competent personnel to do effective in-service education.

16. Too many teachers feel that they are overloaded with teaching and extra-school activities. Therefore, finding time for in-service training is difficult.

17. Enlisting teachers who have been out of school for several years.

18. Exchanging innovative practices with others.

19. Financial assistance to teachers who already have master's degree.

20. Courses for credit during the school year, both in agricultural education and in technical agriculture.

21. How does one best proceed in creating the desire, within teachers, for their own self improvement?

22. What is a good procedure for setting up courses or workshops for improving teachers in technical competencies?

23. Methods for preparing: (1) teachers on the job for participation in occupational training; (2) subject matter specialists who would have occupational skills but who would need help with organization and methods of teaching.

24. Re-evaluation of in-service programs: (1) Work experiences; (2) Evaluation of occupational training programs.

25. Evaluation of programs to point up adjustments and revisions needed in light of the broader objectives of vocational education.

26. Ways and means of keeping teachers up to date technically and professionally.

27. Developing and maintaining desirable pr[illegible]ssional attitude.

28. Developing better understanding of vocational programs with guidance personnel and school administrators.

29. Teacher recruitment as a part of in-service education.

30. Personnel and scheduling.

31. Content materials.

32. Requisition for materials--equipment inventories and care.

33. Extent to which available credit courses may be used.

34. Methods of following up on implementation of inservice.

35. Program designs for high quality off-campus training programs.

36. Designs for the six-year program that cuts across all vocational services (between MS and EdD).

37. Develop evaluation instruments for teacher education.

38. Scheduling in-service teacher training for short term programs.

39. Selecting teaching materials for multiple occupations.

40. Teacher training for job-oriented-basic education.

41. How to effectively help teachers work in groups when there is only one of his kind (subject area) in the state.

42. What to do for apprentice group study instructors.

43. Finding effective ways of helping teachers to keep abreast of present day developments in vocational education including subject matter, teaching methods and groups to be reached.

44. Ways of correlating junior and senior high school programs.

45. Evaluating the effectiveness of in-service education now in progress.

46. Inventorying needs of vocational education personnel.

47. Means of individualizing in-service education (serving the isolated teacher).

48. Planning effective in-service education activities.

49. Types of programs of interest to all vocational teachers; i.e., new teaching techniques, team teaching, etc.

50. Funds for.

51. What preparation (professional and practical) is deemed necessary for teachers in vocational programs offering occupational training?

52. Clarification of the role of institutions of higher learning in the in-service education in relation to occupational instruction at the high school level.

53. The feasibility of offering some courses such as guidance, evaluation, supervision of work experiences and other phases common to all areas of vocational education on a cooperative basis.

54. Guidelines for developing Occupational Education programs at various levels (high school, adult, vocational-technical schools and junior colleges).

55. Planning and developing curriculums that are based on a job analysis that meets community needs.

56. Ways to help teachers evaluate their programs.

57. Teacher Certification.

58. Off campus workshops, travel and time off by coordinators (funds for teachers to attend workshops, and summer sessions).

59. Qualified personnel to use as guest instructors--"Time" to schedule workshops.

60. Ways and means of up-dating the technical skills of trade and industrial education teachers through in-service education.

61. Give some thought to offering general education courses to trade and industrial education teachers during in-service summer programs.

62. How can individuals at all levels be involved in examining current problems of Vocational Education?

63. In-service program for state staff to increase their effectiveness in working with local schools.

64. Assisting local school systems with program planning.

65. Time element for teachers to meet.

66. Determining most critical needs of each individual teacher.

67. Securing appropriate resource people.

68. How can we bring business education teachers up to date in office technology and practices?

69. What materials are or can be made available to help business teachers instruct students in modern office technology?

70. How can teachers who are not eligible for entrance to some of our "high quality" graduate schools be assisted professionally so as to increase their earnings simultaneously?

71. Upgrading of researchers.

72. Upgrading of education materials development personnel.

73. Upgrading of vocational guidance counselors.

74. In-service education for short term course instructors re. MDTA instructors.

75. In-service education for instructors who have been employed after July 1 in preparation for beginning teaching September 1.

76. Teacher experimental research in the field as a means of in-service education.

APPENDIX E

IN-SERVICE PROGRAMS THAT HAVE BEEN EFFECTIVE

1. The following is an indirect approach to in-service improvement:

   A committee, composed of a representative from the four business teacher education institutions in Florida is currently making a study of needed research in business education for the entire state. Some interesting things have and are developing.
   (Frink, Florida)

2. Off-campus, weekend, and extension courses for graduate credit.
   (Snowden, Mississippi)

3. Workshops in agricultural mechanics.
   Revising course of study and using units of instruction (units prepared by Department).
   (Binkley, Kentucky)

4. Providing itinerant classes in teacher education at the various area vocational schools in Kentucky.
   (McDowell, Kentucky)

5. Plans for additional staff for in-service training.

6. Saturday conferences for teachers of business subjects.
   (Wagoner, Tennessee)

7. We are now developing a new program that will cover the entire state. I'm assigning one man full time to off-campus in-service education.
   (Wiegers, Tennessee)

8. In-service training at Annual Conferences. (Kent, Virginia)

9. J.I.T. courses for new MDTA or Trade Extension instructors.
   (Lowe, Virginia)

10. Utilizing Curriculum Development as an in-service education activity.
    (Eberle, West Virginia)

11. T & I in-service. (Hanson, North Carolina)

12. In distributive education the State Staff conducts an in-service education area meeting in ten areas nine times a year in each area. This service has proved very valuable to our new as well as older teachers. (Bishop, North Carolina)

13. Series of off campus workshops for teacher certification taught out in state to uncertified personnel.
Use of workshops (guidance and selection of students) to furnish materials to...make coordinator bulletins.
(Cheshire, Georgia)

14. In-Service Electronics Seminars for trade and industrial education electronics teachers were conducted by Savannah State College in cooperation with the Georgia State Department of Education and the Philco Corporation for four consecutive years.
(Hall, Georgia)

15. Program of In-Service Education provided personnel workers in v-t schools.
Program to acquaint counselors and principals with area v-t schools.
(Bottoms, Georgia)

16. A six weeks Supervised Work Experience Program to be offered this summer.
(Crews, Florida)

17. Occupational competency examinations--one means of encouraging professional improvement and in-service education.
(Wray, Florida)

CONSOLIDATED UNIVERSITY OF NORTH CAROLINA

WILLIAM FRIDAY, Ph.D. ..... President

NORTH CAROLINA STATE UNIVERSITY AT RALEIGH

JOHN TYLER CALDWELL, Ph.D. ..... Chancellor
HARRY C. KELLY, Ph.D. ..... Dean of Faculty
WALTER J. PETERSON, Ph.D. ..... Dean of Graduate School

CENTER FOR OCCUPATIONAL EDUCATION

Policy Coordinating Board

HAROLD F. ROBINSON, Ph.D., Chairman ..... Administrative Dean for Research
H. BROOKS JAMES, Ph.D. ..... Dean, School of Agriculture and Life Sciences
J. BRYANT KIRKLAND, Ph.D. ..... Dean, School of Education
FRED V. CAHILL, Ph.D. ..... Dean, School of Liberal Arts
ARTHUR C. MENIUS, JR., Ph.D. ..... Dean, School of Physical Sciences and Applied Mathematics

Heads of Participating and Cooperating Departments

EDGAR J. BOONE, Ph.D. ..... Adult Education
C. CAYCE SCARBOROUGH, Ed.D. ..... Agricultural Education
C. EDWIN BISHOP, Ph.D., 1957-1966 ..... Economics
WILLIAM D. TOUSSAINT, Ph.D., 1966- ..... Economics
DAVID D. MASON, Ph.D. ..... Experimental Statistics
DURWIN M. HANSON, Ph.D. ..... Industrial and Technical Education
ROY N. ANDERSON, Ph.D. ..... Occupational Information and Guidance
PRESTON W. EDSALL, Ph.D. ..... Politics
HOWARD G. MILLER, Ph.D. ..... Psychology
SELZ C. MAYO, Ph.D. ..... Sociology and Anthropology

Center Administration and Research Personnel

JOHN K. COSTER, Ph.D. ..... Director, 1966-
SELZ C. MAYO, Ph.D. ..... Acting Director, 1965-66

Professors

ROY N. ANDERSON, Ph.D. ..... Occupational Information and Guidance
HERBERT M. HAMLIN, Ph.D. ..... Education
C. CAYCE SCARBOROUGH, Ed.D. ..... Agricultural Education

Associate Professors

HARRY G. BEARD, Ed.D. ..... Agricultural Education and Sociology
NORMAN M. CHANSKY, Ph.D. ..... Education and Psychology
LAWRENCE W. DRABICK, Ph.D. ..... Sociology and Anthropology
DONALD W. DREWES, Ph.D. ..... Psychology
LOREN A. IHNEN, Ph.D. ..... Economics
C. PAUL MARSH, M.S. ..... Sociology and Anthropology
TEXTON R. MILLER, Ph.D. ..... Agricultural Education
CARL A. MOELLER, Ed.D. ..... Industrial and Technical Education
TALMAGE B. YOUNG, Ed.D. ..... Industrial and Technical Education

Assistant Professors

C. DOUGLAS BRYANT, Ed.D. ..... Agricultural Education
ADGER B. CARROLL, Ph.D. ..... Economics
ROBERT M. FEARN, M.A. ..... Economics
CHARLES I. JONES, Ed.D. ..... Agricultural Education
CHARLES H. ROGERS, Ed.D. ..... Coordinator of Services and Conferences
BERT W. WESTBROOK, Ed.D. ..... Education and Psychology
DOROTHY S. WILLIAMS, Ph.D. ..... Sociology and Anthropology

Instructors

CLEBURN G. DAWSON, M.Ed. ..... Sociology and Anthropolog
ELIZABETH S. DRANE, B.A. ..... Educatio
WILLIAM E. FULFORD, JR., M.A. ..... Educatio
GEORGE EARL HOWARD, B.S. ..... Educatio
JAMES B. JONES, B.S. ..... Educatio
CHARLES E. LEWIS, M.S. ..... Sociology and Anthropolog
JOSEPH C. MATTHEWS, JR., Ph.D. ..... Economic
GEORGE L. MORELOCK, JR., B.A. ..... Educatio
DOROTHY H. RINNE, B.A. ..... Educatio
RICHARD L. TEAGUE, M.S. ..... Sociology and Anthropolog

Graduate Research Assistants

WILLIAM H. ADAMS, JR., B.S. ..... Agricultural Educatio
LEWIS C. FORREST, B.S. ..... Agricultural Educatio
MARIETTA A. FROMM, M.S. ..... Sociology and Anthropolog
O. JAMES GAYLORD, B.S. ..... Agricultural Educatio
COY L. HUDSON, B.S. ..... Agricultural Educatio
THEODORE P. LIANOS, B.S. ..... Economi
SYLVIA R. McCRACKEN, B.A. ..... Sociology and Anthropolog
LYNN E. ONDRIZEK, B.A. ..... Psycholog
ROY S. PAINTER, B.S. ..... Mathematics Educatio
N. HAROLD ROSE, B.S. ..... Agricultural Educatio
JAMES R. SELLERS, B.S. ..... Occupational Information and Guidan

Assistant in Research

ROBERT C. EVANS, B.S. ..... Educatio

Clerical and Administrative Staff

DEBORAH T. ASH ..... Secreta
BETTY W. CREWS ..... Secreta
JUDY T. GAY ..... Secreta
SHERRY Y. HAMILTON ..... Secreta
GLENDA M. JONES ..... Statistical Cle
ANITA H. MANN, B.S. ..... Secreta
LINDA H. RHYNE ..... Secreta
LINDA R. SCANNELL ..... Budget and Fiscal Offic
BETTY G. UTERMOHLEN, B.S. ..... Administrative Assista
KATHY C. WOODSON ..... Secreta